

Taxonomic transfers to *Fernandezia* (Orchidaceae: Oncidiinae) and *Maxillaria* (Orchidaceae: Maxillariinae)^a

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Abstract

Three species of *Mormolyca* and four species of *Pachyphyllum* are transferred to *Maxillaria* and *Fernandezia*, respectively.

Résumé

Transferts taxinomiques dans *Fernandezia* (Orchidaceae, Oncidiinae) et *Maxillaria* (Orchidaceae, Maxillariinae) – Trois espèces de *Mormolyca* et quatre de *Pachyphyllum* sont transférées dans *Maxillaria* et *Fernandezia*, respectivement.

Resumen

Transferencias taxonómicas a *Fernandezia* (Orchidaceae, Oncidiinae) y *Maxillaria* (Orchidaceae, Maxillariinae) – Tres especies de *Mormolyca* y cuatro de *Pachyphyllum* son transferidas a *Maxillaria* y *Fernandezia*, respectivamente.

Introduction

With the advancement of molecular biology, our understanding of relationships between organisms has become more detailed. Within the Orchidaceae, major studies had revolutionised how we classify these plants (Dressler, 1993; Szlachetko, 1995; Chase *et al.*, 2003; Chase *et al.* 2015).

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Maxillaria Ruiz & Pavón is a mega-genus, with over 650 species (Chase *et al.*, 2015; Schuiteman & Chase, 2015). As currently circumscribed, it contains formerly well recognised genera, both new and old, and is well characterised by a combination of characters, unique within the Maxillariinae: single-flowered inflorescences, column foot with a hinged lip and conduplicate leaves (Schuiteman & Chase, 2015). Therefore, in recent studies (Molinari-Novoa, 2015b; Schuiteman & Chase, 2015), the systematics of *Maxillaria* have been revised, resulting in the lumping together of many genera formerly considered to be autonomous entities. For further comments and insights regarding the taxonomy of *Maxillaria*, one can refer to the literature cited in our bibliography.

A similar case occurs in *Fernandezia* Ruiz & Pavón. After publication of the study of Chase & Whitten (2011), three genera, formerly considered to be autonomous entities, were included: *Pachyphyllum* Kunth, *Orchidotypus* Kraenzlin and *Raycadenco* Dodson. This “enlarged” *Fernandezia* has, as unique features within Oncidiinae, a monopodial growth and pollinaria with two caudicles (contrasting with one caudicle of the other genera in Oncidiinae). For a more comprehensive comment of this group, see Molinari-Novoa (2015a).

However, three species, recently described as belonging to the genus *Mormolyca* Fenzl, have not been yet transferred (Arévalo *et al.*, 2015). The same applies to four species described as belonging to the genus *Pachyphyllum* (Szlachetko & Kolanowska, 2014; Szlachetko *et al.*, 2014a). For those seven species we herewith propose new combinations. In order to effect the changes, a bibliographic was ensued, and nomenclatural changes were proposed in accordance to the International Code of Nomenclature (McNeill *et al.*, 2012).

Taxonomic treatment

Maxillaria cruentata (Arévalo & Bergquist) Molinari & Mayta, *comb. nov.*

Basionym: *Mormolyca cruentata* Arévalo & Bergquist, *Systematic Botany* 40(3): 694 (2015)

Maxillaria prunina (Arévalo) Molinari & Mayta, *comb. nov.*

Basionym: *Mormolyca prunina* Arévalo, *Systematic Botany* 40(3): 700 (2015)

Maxillaria tagianarae Molinari, *nom. nov.*

Replaced name: *Mormolyca dodsonii* Carnevali & Arévalo, *Systematic Botany* 40(3): 696 (2015). *Non Maxillaria dodsonii* (Carnevali) Molinari (2015).

Etymology: named after Tatiana Giannina Anaya Araujo (as an acronym), colleague and dearest friend of the species' author, who supported his research on Maxillariinae nomenclature.

Fernandezia foreroi (Szlachetko & Kolanowska) Molinari & Mayta, *comb. nov.*

Basionym: *Pachyphyllum foreroi* Szlachetko & Kolanowska, *Nordic Journal of Botany* 32: 745 (2014)

Fernandezia idroboi (Szlachetko & Kolanowska) Molinari & Mayta, *comb. nov.*

Basionym: *Pachyphyllum idroboi* Szlachetko & Kolanowska, *Nordic Journal of Botany* 32: 748 (2014)

Fernandezia longipedicellata (Szlachetko, Kolanowska & Ołędryńska) Molinari & Mayta, *comb. nov.*

Basionym: *Pachyphyllum longipedicellatum* Szlachetko, Kolanowska & Ołędryńska, *Annales Botanici Fennici* 51(4): 225 (2014).

Fernandezia putumayoensis (Szlachetko, Kolanowska & Ołędryńska) Molinari & Mayta, *comb. nov.*

Basionym: *Pachyphyllum putumayoense* Szlachetko, Kolanowska & Ołędryńska, *Annales Botanici Fennici* 51(4): 223 (2014) [as "*putumayoensis*"].

With these nomenclatural novelties, the number of recognised species of *Maxillaria* is 661 (Chase *et al.*, 2015; Schuiteman & Chase, 2015). Thirty-one (31) belong to *Maxillaria* sect. *Rufescens* Christenson (Schuiteman & Chase, 2015). The genus *Fernandezia* is now enlarged to contain 56 species (Chase *et al.*, 2015; Molinari-Novoa, 2015b).

Discussion

Although the current studies recognise enlarged concepts for the genera *Maxillaria* and *Fernandezia*, other authors have chosen the splitting approaches which are still widely accepted. Within the *Maxillaria* complex, Blanco *et al.* (2007) defined seventeen (17) genera. In a more recent study, Szlachetko *et al.* (2012) divided *Maxillaria sensu lato* into thirty-seven (37) genera. Similarly, the *Fernandezia* complex has been divided into several genera resulting in the recognizing of *Orchidotypus* Kraenzlin, *Pachyphyllum* Kunth, *Raycadenco* Dodson and *Fernandezia sensu stricto* by Kolanowska & Szlachetko (2013a; 2013b) and Szlachetko *et al.* (2014b). Recently, a new monotypic genus, *Valdiviesoa* Szlachetko & Kolanowska, was described to contain *Fernandezia debedoutii* (P.Ortiz) M.W.Chase (Kolanowska &

Szlachetko, 2015). This group has been considered (and is still considered by some authors) part of the subtribe Pachyphyllinae Pfitzer. The discussion about splitting or lumping entities in plant taxonomy is, and will always be, a never ending issue. Nevertheless, we hope that our brief study will, in the end, help to achieve a natural classification.

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References

- Arévalo, R., G.Carnevali Fernández-Concha, K.M.Cameron, 2015. Three New Species of *Mormolyca* (Orchidaceae: Maxillariinae) with an Updated Molecular Phylogenetic Analysis. *Systematic Botany* 40(3): 692-705.
- Blanco, M.A., G.Carnevali, W.M.Whitten, R.B.Singer, S.Koehler, N.H.Williams, I.Ojeda, K.M.Neubig & L.Endara, 2007. Generic realignments in Maxillariinae (Orchidaceae). *Lankesteriana* 7(3): 515-537.
- Chase, M.W., K.M.Cameron, R.L.Barrett, J.V.Freudenstein, 2003. DNA data and Orchidaceae systematics: a new phylogenetic classification. In: K.M.Dixon, S.P.Kell, R.L.Barret & P.J.Cribb (eds.) *Orchid conservation*. Natural History Publications, Kota Kinabalu. pp 69-89.
- Chase, M.W. & W.M.Whitten, 2011. Further taxonomic transfers in Oncidiinae (Orchidaceae). *Phytotaxa* 20: 26-32.
- Chase, M.W., K.M.Cameron, J.V.Freudenstein, A.M.Pridgeon, G.Salazar, C.van den Berg & A.Schuiteman, 2015. An updated classification of Orchidaceae. *Botanical Journal of the Linnean Society* 177(1): 151-174.
- Christenhusz, M.J.M., M.S.Vorontsova, M.F.Fay & M.W.Chase, 2015. Results from an online survey of family delimitation in angiosperms and ferns: recommendations to the Angiosperm Phylogeny Group for thorny problems in plant classification. *Botanical Journal of the Linnean Society* 178(4): 501-528.
- Dressler, R.L., 1971. Nomenclatural Notes on the Orchidaceae – V. *Phytologia* 21(7): 440-444.
- Dressler, R.L., 1993. *Phylogeny and classification of the orchid family*. Cambridge University Press, Cambridge. pp 1-330.
- Kolanowska, M & D.L.Szlachetko, 2013a. *Fernandezia ortiziana* (Orchidaceae), a new species from Colombia. *Annales Botanici Fennici* 50: 68-70.

- Kolanowska, M & D.L.Szlachetko, 2013b. *Pachyphyllum hagsateri* Dodson (Orchidaceae, Pachyphyllinae), un nuevo registro en la flora colombiana. *Orquideología* 30(2): 84-89.
- Kolanowska, M & D.L.Szlachetko, 2015. Notes on Pachyphyllinae (Vandoideae, Orchidaceae) with a description of a new genus. *Plant Systematics and Evolution* 301: 95-111.
- McNeill J., F.R.Barrie, W.R.Buck, V.Demoulin, W.Greuter, D.L.Hawksworth, P.S.Herendeen, S.Knapp, K.Marhold, J.Prado, W.F.Prud'homme van Reine, G.E.Smith, J.H.Wiersema & N.J.Turland, 2012. *International Code of Nomenclature for algae, fungi, and plants (Melbourne Code) adopted by the Eighteenth International Botanical Congress Melbourne, Australia, July 2011*. Koeltz Scientific Books, Köenigstein. pp 1-240.
- Molinari-Novoa, E.A., 2015a. Note taxinomique sur le genre *Orchidotypus* (= *Fernandezia*) en Colombie et au Pérou. *Richardiana* 15: 266-269.
- Molinari-Novoa, E.A., 2015b. Homage to Christenson: combinations under *Maxillaria*. *Richardiana* 15: 291-305.
- Schuiteman, A. & M.W. Chase, 2015. A reappraisal of *Maxillaria* (Orchidaceae). *Phytotaxa* 225(1): 1-78. <http://dx.doi.org/10.11646/phytotaxa.225.1.1>
- Szlachetko D.L., 1995. Systema orchidalium. *Fragmenta Floristica et Geobotanica, Supplementa* 3: 1-152.
- Szlachetko, D.L., M.Sitko, P.Tukałło, J.Mytnik-Ejsmont, 2012. Taxonomy of the Subtribe Maxillariinae (Orchidaceae, Vandoideae) revised. *Biodiversity: Research and Conservation* 25: 13-38.
- Szlachetko, D.L., M.Kolanowska & N. Olędrzyńska, 2014a. Two New Species of *Pachyphyllum* (Orchidaceae, Vandoideae) from Colombia. *Annales Botanici Fennici* 51(4): 222-226.
- Szlachetko, D.L., M.Kolanowska & K.Mystkowska, 2014b. A synopsis of the genus *Orchidotypus* (Orchidaceae, Vandoideae) in Colombia, with description of a new species. *Polish Botanical Journal* 59(2): 165-172.
- Szlachetko, D.L. & M.Kolanowska, 2014. *Pachyphyllum foreroi* and *P. idroboi* spp. nov. (Orchidaceae, Vandoideae) from Colombia. *Nordic Journal of Botany* 32: 744-751.

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